

REMARKS

In the Office Action, claims 1-27 were pending. Claims 1, 3, 8, 10, 12, 13, 15, 16, 20 and 23 have been amended, claims 6-7, 11, 14, 18 and 27 are cancelled. Reconsideration and allowance of the pending claims is respectfully requested in view of the amendments and the following discussion.

1. Claim Objections

Applicant wishes to thank the Examiner for careful review of the claims. The Examiner indicates that claims 3 and 13 are objected to because of the recitation “and/or”. Examiner suggests changing the recitation “and/or” to “or”. Applicant has amended claims 3 and 13 per the Examiner’s suggestion. Withdrawal of the rejection is respectfully requested.

2. Allowable Claims

Applicant wishes to thank the Examiner for indication that claim 12 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant has amended claim 12 to place in independent form, including all of the limitation of the base claim. Claims 8-10, 13 and 15 are amended to depend from claim 12. Accordingly, allowance of claims 8-10, 12, 13 and 15 is respectfully requested.

3. Rejections in view of prior art

Claims 20-21, 25, and 26 stand rejected under 35 USC 102(e) as being unpatentable over Pub. No. 2003/0093067 to Panescu (herein the Panescu reference).

Claims 1-11, 13-19, 22-24, and 27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Panescu reference in view of US Patent No. 6,301,496 to Reisfield (herein the Reisfield reference).

1. Prior Art

The Panescu reference discloses a system to map movement of treatment element 164 of a treatment device 162 through a subject (see paragraph 35). The imaging device includes an ultrasound imaging element 124 to acquire image data of the subject volume.

(See paragraph 39). The Examiner acknowledges that the Panescu reference does not disclose registering the probe which is in or adjacent to the heart with the image using a heart vector of the heart. See page 6 of Office action dated June 12, 2007.

The Reisfield reference discloses a mapping system 18 with a catheter tip 26 of a mapping catheter 20. Col. 17, lines 5-27. A grid 90 is aligned to the heart, and a flexible matching technique is employed to move or shift grid points to the sampling points of the catheter 20 at the heart. Col. 20, lines 48-60. The described data includes an electrical conduction vector representative to a conductive velocity of the heart based on acquired local activation times. See col. 24, lines 2-13; col. 25, line 43- col. 28, line 28.

2. Arguments over Cited Prior art

a. Independent Claim 1

Claim 1 as amended recites the heart vector represents a summation of electrical currents at a particular time, the summation having a direction and an amplitude and generated from data acquired by a lead system at a surface of an imaged subject with the heart.

Neither of the cited references disclose the above-described subject matter. As noted above. The Reisfield reference discloses an ECG monitor 73. However, the Reisfield reference does not disclose generating the vector as recited in claim 1. Also, the Reisfield does not disclose mapping the recited vector relative to a probe and the heart. For at least this reason, cited references do not teach each of the limitations recited in claim 1. Accordingly, reconsideration and allowance of claim 1 is respectfully requested.

Claims 2-5 depend from claim 1 and are believed allowable for at least the same reasons that claim 1 is believed allowable. Claims 2-5 may also include patentable subject matter in addition to that recited in claim 1.

b. Independent Claim 16

Claim 16 as amended recites, *inter alia*, a method that includes registering a location of a first heart vector from a first data set relative a lead system at a surface of an imaged subject. The first heart vector represents a summation of electrical currents at

a particular time, the summation having a direction and an amplitude. The method further includes registering a location of the second heart vector from the second data set relative to the lead system, and adjusting the size or position of the image dependent on a change in the location of the first and second heart vector generated from the first and second data sets, respectively. For reasons similar to those described above with respect to claim 1, none of the cited references disclose first and second heart vectors as recited in claim 1. Moreover, none of the cited references disclose adjusting the image dependent on a change in location of the first and second vectors relative to the lead system. None of the cited references disclose each and every limitation of the claimed subject matter. Accordingly, reconsideration and allowance of claim 16 is respectfully requested.

Claims 17-19 depend from claim 16 and are believed allowable for at least the same reasons that claim 16 is believed allowable. Claims 17-19 may also include patentable subject matter in addition to that recited in claim 16.

c. Independent Claim 20

Claim 20 is amended similar to claim 12, and believed allowable for reasons similar to those indicated to be allowable in claim 12. Accordingly, reconsideration and allowance of claim 20 is respectfully requested.

Claims 21-26 depend from claim 20 and are believed allowable for at least the same reasons that claim 20 is believed allowable. Claims 21-26 may also include patentable subject matter in addition to that recited in claim 20.

CONCLUSION

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

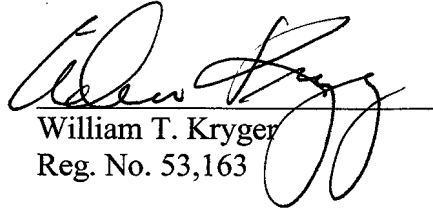
No fees are believed due with this communication. Yet, the Commissioner is hereby authorized to charge any additional fees which may be required regarding this application or credit any overpayment to Deposit Account No. 070845. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for

such extension and authorizes payment of any such extension fees to Deposit Account No. 070845.

The Examiner is invited to contact the undersigned at telephone number (262) 548-4654 if it is felt that a telephone interview would advance the prosecution of the application.

Respectfully submitted,

Date: Sept. 13, 2007


William T. Kryger
Reg. No. 53,163

Customer No. 61604